

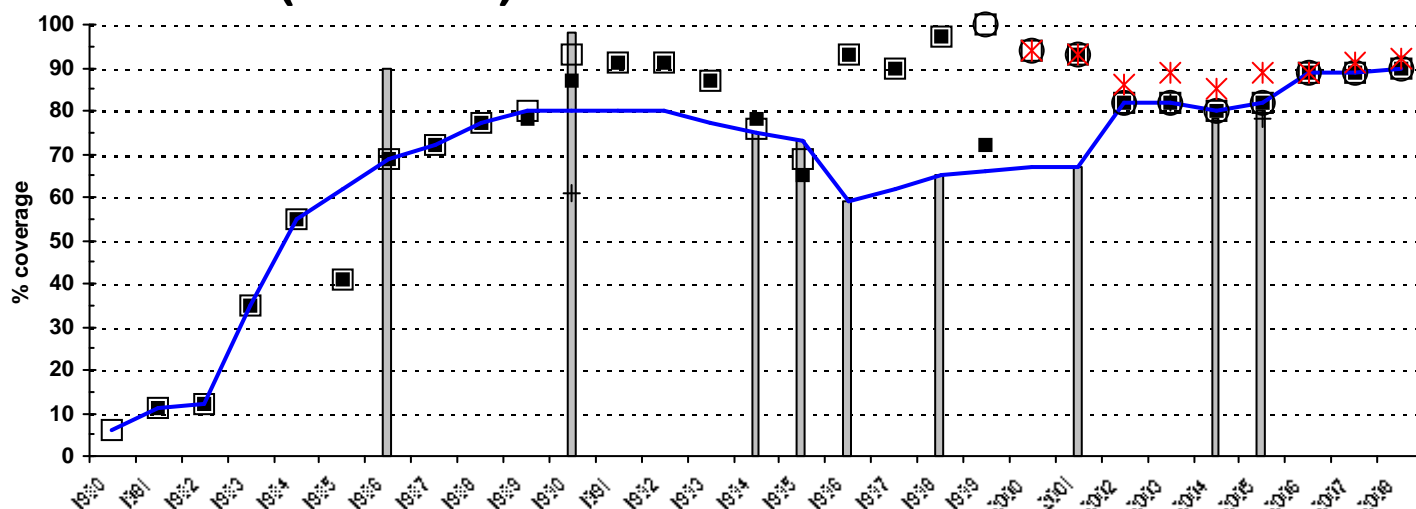
**WHO/UNICEF
Review of National Immunization Coverage
1980-2008**

Pakistan

July, 2009

Pakistan

BCG (1980-2008)



Description of trend

Trends follow officially reported data until 1989. Coverage increases steadily between the early 1980s to 1989 due to efforts to achieve UCI. Until 1993, vaccine supply was funded primarily by external donors. From 1993-1995 programme performance was compromised by erratic and dwindling supplies of vaccine, which resulted in a decline of coverage rates. Since 1994, the national government funds all routine immunization activities and coverage gradually increases. Estimates from 1994-2001 are based on survey results. From 2002 onward estimates are based on national reports supported by surveys.

Data presented in chart

Year	WHO/ UNICEF estimate (%) —	Reported to:*		Government official estimate (%) ○	Reported doses administered (%)** ✕	Survey data (%)***	
		WHO (%) □	UNICEF (%) ■			Survey 12-23 months 	Survey <12 months +
1980	6	6					
1981	11	11	11				
1982	12	12	12				
1983	35	35	35				
1984	55	55	55				
1985	62	41	41				
1986	69	69	69			90	
1987	72	72	72				
1988	77	77	77				
1989	80	80	78				
1990	80	93	87			98	61
1991	80	91	91				
1992	80	91	91				
1993	77	87	87				
1994	75	76	78			75	
1995	73	69	65			73	
1996	59	93	93			59	
1997	62	90	90				
1998	65	97	97			65	
1999	66	100	72	100	105		
2000	67	94		94	94		
2001	67	93	93	93	93	67	
2002	82	82	82	82	86		
2003	82	82	82	82	89		82
2004	80	80	80	80	85	78	
2005	82	82	82	82	89	80	78
2006	89	89	89	89	89		
2007	89	89	89	89	91		
2008	90	90	90	90	92		

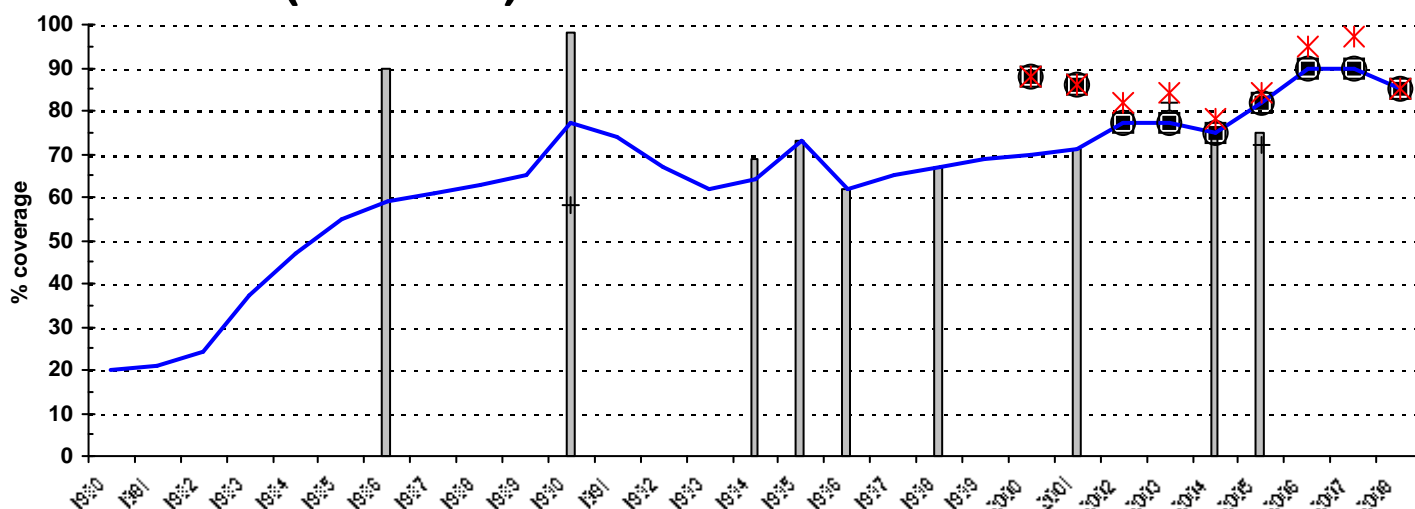
*Prior to 1998 national reports to WHO/UNICEF did not specify whether information was derived from administrative records, surveys or other sources.

**Coverage based on registration of doses administered by health care providers.

***In case more than one survey was implemented in a certain year the highest value is presented. Details of all data are presented in the second section of this report.

Pakistan

DTP1 (1980-2008)



Description of trend

WHO and UNICEF began requesting data on DTP1 coverage in 2001 and have received national reports reflecting DTP1 coverage from 2001 onward. Estimates from 1995-2001 are based on survey data. For years prior to 1995 the estimates are derived from the WHO/UNICEF estimates of DTP3 and the relationship between the levels of DTP3 coverage and the drop-out between DTP1 and DTP3. This relationship results from an analysis of 282 surveys conducted in 101 countries which were published between 1980 and 2004. Supplies for DTP-HepB vaccine were available until mid-2008 when introduction of DTP-HepB-Hib pentavalent vaccine was planned. Introduction of pentavalent was postponed because of delays in transfer of funds by GAVI resulting in a decline of DTP coverage.

Data presented in chart

Year	WHO/ UNICEF estimate (%)	Reported to:*		Government official estimate (%)	Reported doses administered (%)**	Survey data (%)***	
		WHO (%)	UNICEF (%)			Survey 12-23 months	Survey <12 months
1980	20						
1981	21						
1982	24						
1983	37						
1984	47						
1985	55						
1986	59					90	
1987	61						
1988	63						
1989	65						
1990	77					98	58
1991	74						
1992	67						
1993	62						
1994	64					69	
1995	73					73	
1996	62					62	
1997	65						
1998	67					67	
1999	69						
2000	70	88	88	88	88		
2001	71	86	86	86	86	71	
2002	77	77	77	77	82		
2003	77	77	77	77	84		82
2004	75	75	75	75	78	75	
2005	82	82	82	82	84	75	72
2006	90	90	90	90	95		
2007	90	90	90	90	97		
2008	85	85	85	85	85		

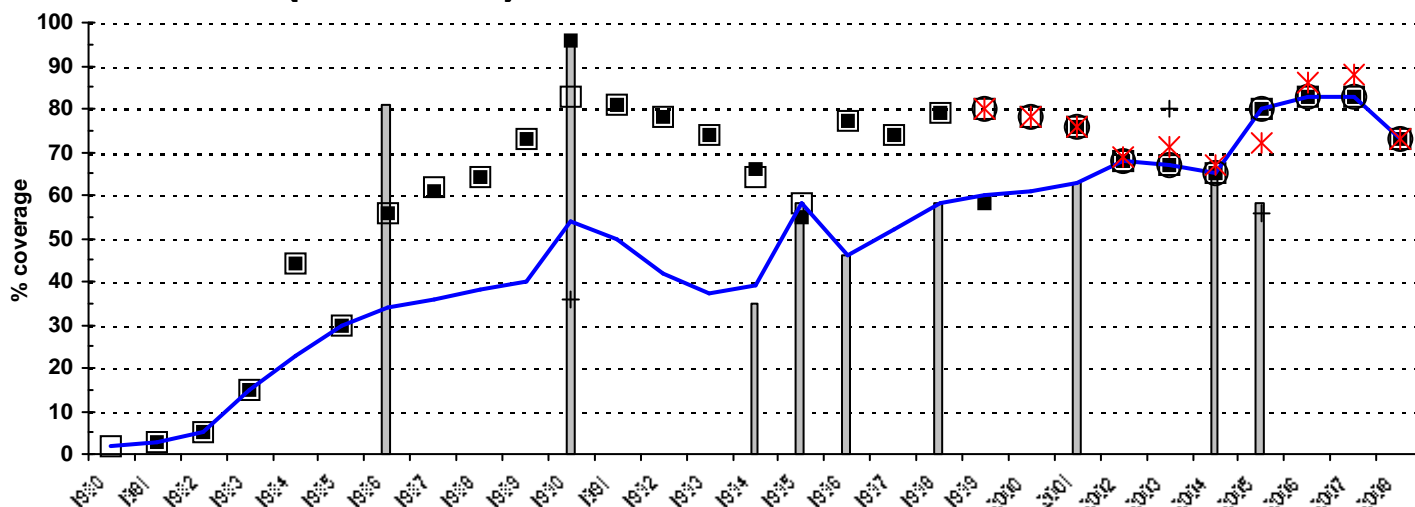
*Prior to 1998 national reports to WHO/UNICEF did not specify whether information was derived from administrative records, surveys or other sources.

**Coverage based on registration of doses administered by health care providers.

***In case more than one survey was implemented in a certain year the highest value is presented. Details of all data are presented in the second section of this report.

Pakistan

DTP3 (1980-2008)



Description of trend

Trends follow officially reported data until 1985. Coverage increases steadily between the early 1980s to 1989 due to efforts to achieve UCI g. Until 1993, vaccine supply was funded primarily by external donors. From 1993-1995 programme performance was compromised by erratic and dwindling supplies of vaccine, which resulted in a decline in coverage rates. Since 1994, the national government funds all routine immunization activities and coverage gradually increases. Estimates from 1994-2001 are based on survey results. From 2002 onward estimates are based on the EPI Coverage Evaluation survey, the DHS 2006 does not support reported data. Supplies for DTP-HepB vaccine were available until mid-2006 when introduction of DTP-HepB-Hib pentavalent vaccine was planned. Introduction of pentavalent was postponed because of delays in transfer of funds by GAVI resulting in a decline of DTP coverage.

Data presented in chart

Year	WHO/ UNICEF estimate (%)	Reported to:*		Government official estimate (%)	Reported doses administered (%)**	Survey data (%)***	
		WHO (%)	UNICEF (%)			Survey 12-23 months	Survey <12 months
1980	2	2	3				
1981	3	3	5				
1982	5	15	15				
1983	15	23	44				
1984	23	30	30				
1985	30	34	56			81	
1986	34	36	62				
1987	36	38	64				
1988	38	40	73				
1989	40	54	83			96	36
1990	54	50	81				
1991	50	42	78				
1992	42	37	74				
1993	37	39	64			35	
1994	39	58	58			58	
1995	58	46	77			46	
1996	46	52	74				
1997	52	58	79			58	
1998	58	60	80	80	80		
1999	60	61	78	78	78		
2000	61	63	76	76	76	63	
2001	63	68	68	68	69		
2002	68	67	67	67	71		80
2003	67	65	65	65	67	64	
2004	65	80	80	80	72	58	56
2005	80	83	83	83	86		
2006	83	83	83	83	88		
2007	83	73	73	73	73		
2008	73						

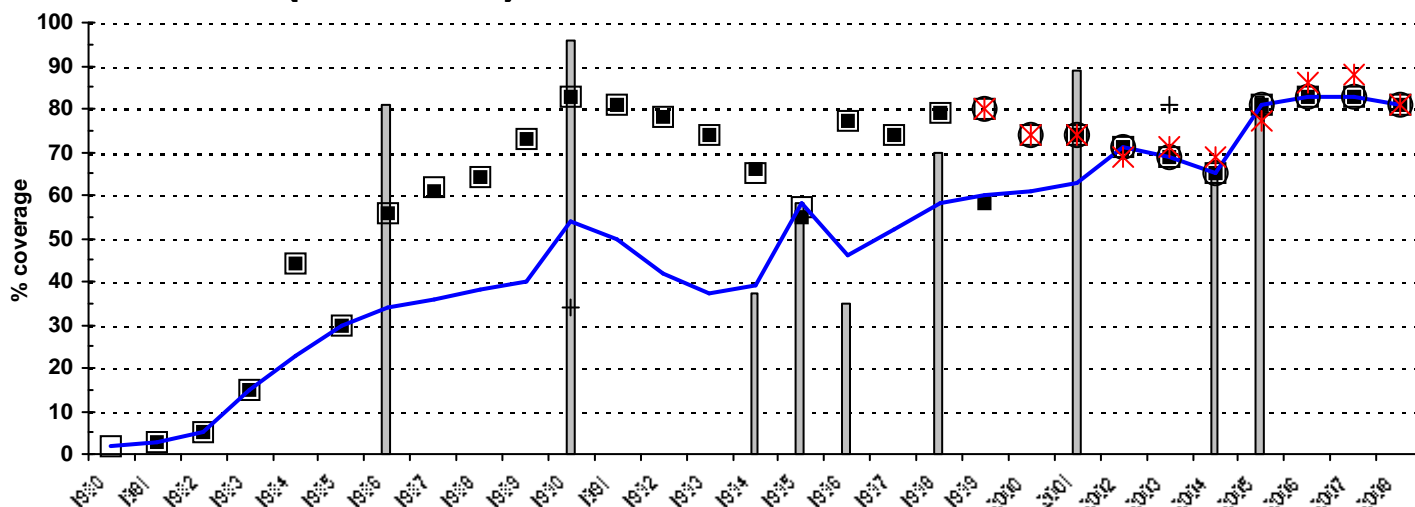
*Prior to 1998 national reports to WHO/UNICEF did not specify whether information was derived from administrative records, surveys or other sources.

**Coverage based on registration of doses administered by health care providers.

***In case more than one survey was implemented in a certain year the highest value is presented. Details of all data are presented in the second section of this report.

Pakistan

Pol3 (1980-2008)



Description of trend

Trends follow officially reported data until 1989. Coverage increases steadily between the early 1980s to 1989 due to efforts to achieve UCI. Until 1993, vaccine supply was funded primarily by external donors. From 1993-1995 programme performance was compromised by erratic and dwindling supplies of vaccine, which resulted in a decline in coverage rates. Since 1994, the national government funds all routine immunization activities and coverage gradually increases. Estimates from 1994-2001 are based on survey results. From 2002 onward estimates are based on national reports supported by survey. Surveys in 1998, 2001, 2005 reporting OPV3 coverage likely include vaccinations included in national polio campaigns.

Data presented in chart

Year	WHO/ UNICEF estimate (%)	Reported to:*		Government official estimate (%)	Reported doses administered (%)**	Survey data (%)***	
		WHO (%)	UNICEF (%)			Survey 12-23 months	Survey <12 months
1980	2	2					
1981	3	3	3				
1982	5	5	5				
1983	15	15	15				
1984	23	44	44				
1985	30	30	30				
1986	34	56	56			81	
1987	36	62	61				
1988	38	64	64				
1989	40	73	73				
1990	54	83	83			96	34
1991	50	81	81				
1992	42	78	78				
1993	37	74	74				
1994	39	65	66			37	
1995	58	57	55			58	
1996	46	77	77			35	
1997	52	74	74				
1998	58	79	79			70	
1999	60	80	58	80	80		
2000	61	74		74	74		
2001	63	74	74	74	74	89	
2002	71	71	71	71	69		
2003	69	69	69	69	71		81
2004	65	65	65	65	69	64	
2005	81	81	81	81	77	83	79
2006	83	83	83	83	86		
2007	83	83	83	83	88		
2008	81	81	81	81	81		

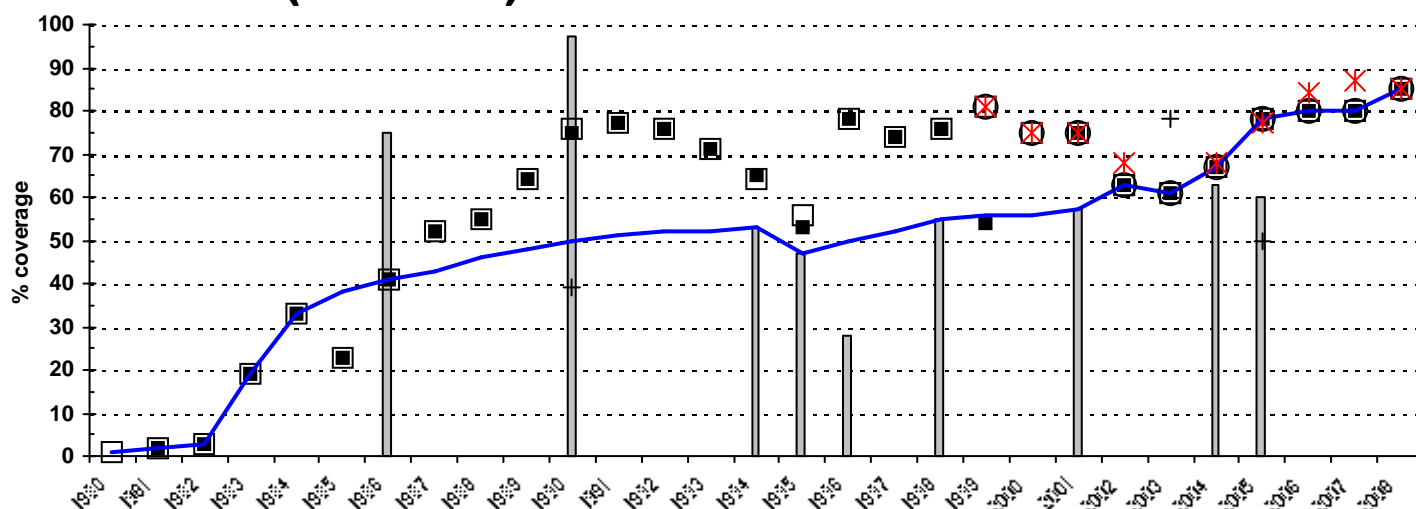
*Prior to 1998 national reports to WHO/UNICEF did not specify whether information was derived from administrative records, surveys or other sources.

**Coverage based on registration of doses administered by health care providers.

***In case more than one survey was implemented in a certain year the highest value is presented. Details of all data are presented in the second section of this report.

Pakistan

MCV (1980-2008)



Description of trend

Trends follow officially reported data until 1989. Coverage increases steadily between the early 1980s to 1989 due to efforts to achieve UCI. Until 1993, vaccine supply was funded primarily by external donors. From 1993-1995 programme performance was compromised by erratic and dwindling supplies of vaccine, which resulted in a decline in coverage rates. Since 1994, the national government funds all routine immunization activities and coverage gradually increases. Estimates from 1994-2001 are based on survey results. From 2002 onward estimates are based on the EPI Coverage Evaluation survey, the DHS 2006 does not support reported data.

Data presented in chart

Year	WHO/ UNICEF estimate (%) —	Reported to:*		Government official estimate (%) ○	Reported doses administered (%)** ✖	Survey data (%)***	
		WHO (%) □	UNICEF (%) ■			Survey 12-23 months 	Survey <12 months +
1980	1	1					
1981	2	2	2				
1982	3	3	3				
1983	19	19	19				
1984	33	33	33				
1985	38	23	23				
1986	41	41	41			75	
1987	43	52	52				
1988	46	55	55				
1989	48	64	64				
1990	50	76	75			97	39
1991	51	77	77				
1992	52	76	76				
1993	52	71	71				
1994	53	64	65			53	
1995	47	56	53			47	
1996	50	78	78			28	
1997	52	74	74				
1998	55	76	76			55	
1999	56	81	54	81	81		
2000	56	75		75	75		
2001	57	75	75	75	75	57	
2002	63	63	63	63	68		
2003	61	61	61	61			78
2004	67	67	67	67	68	63	
2005	78	78	78	78	77	60	50
2006	80	80	80	80	84		
2007	80	80	80	80	87		
2008	85	85	85	85	85		

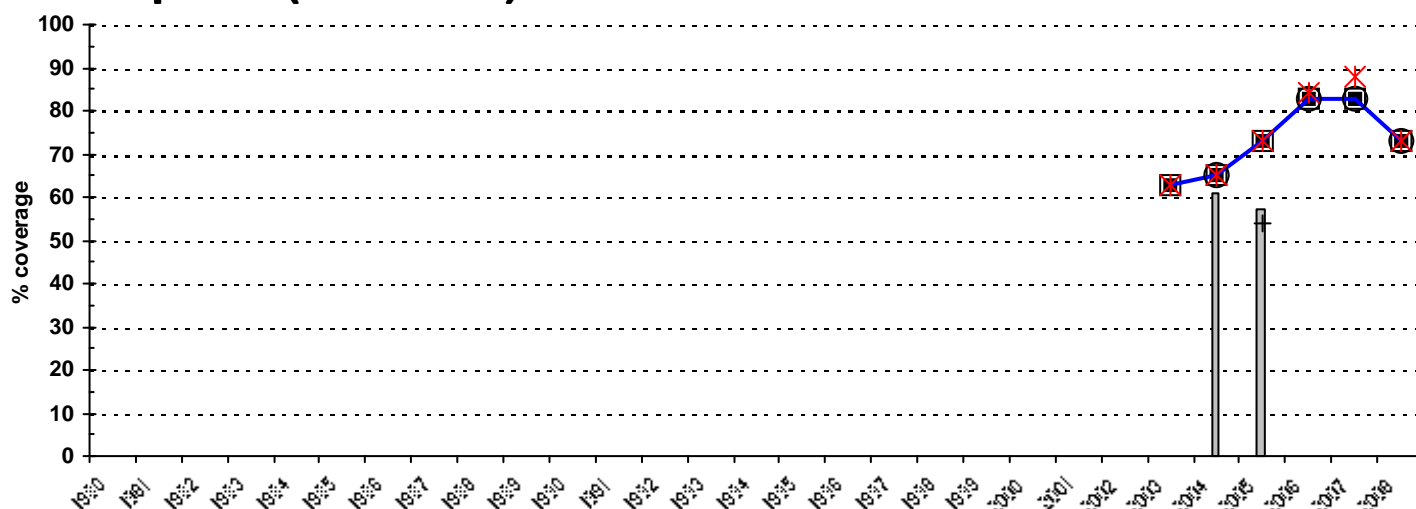
*Prior to 1998 national reports to WHO/UNICEF did not specify whether information was derived from administrative records, surveys or other sources.

**Coverage based on registration of doses administered by health care providers.

***In case more than one survey was implemented in a certain year the highest value is presented. Details of all data are presented in the second section of this report.

Pakistan

HepB3 (1980-2008)



Description of trend

HepB3 introduced in 2001 and available nationally in 2002. Coverage levels first reported for 2003. From 2002 onward estimates are based the EPI Coverage Evaluation survey, the DHS 2006 does not support reported data. Supplies for DTP-HepB vaccine were available until mid 2008 when introduction of DTP-HepB-Hib pentavalent vaccine was planned. Introduction of pentavalent was postponed because of delays in transfer of funds by GAVI resulting in a decline of DTP coverage.

Data presented in chart

Year	WHO/ UNICEF estimate (%)	Reported to:*		Government official estimate (%)	Reported doses administered (%)**	Survey data (%)***	
		WHO (%)	UNICEF (%)			Survey 12-23 months	Survey <12 months
1980							
1981							
1982							
1983							
1984							
1985							
1986							
1987							
1988							
1989							
1990							
1991							
1992							
1993							
1994							
1995							
1996							
1997							
1998							
1999							
2000							
2001							
2002							
2003	63	63	63		63		
2004	65	65	65	65	65	61	
2005	73	73	73		73	57	54
2006	83	83	83	83	84		
2007	83	83	83	83	88		
2008	73	73	73	73	73		

*Prior to 1998 national reports to WHO/UNICEF did not specify whether information was derived from administrative records, surveys or other sources.

**Coverage based on registration of doses administered by health care providers.

***In case more than one survey was implemented in a certain year the highest value is presented. Details of all data are presented in the second section of this report.

Pakistan

Details Survey Data

Year Source

Antigen	Confirmation method	% coverage	Compliance with schedule	Age group	Sample size	% cards seen	Survey year	Comments
2005 Pakistan Demographic and Health Survey 2006-07								
BCG	Card or History	80.3		12-23 m	1522	23.7	2006	
BCG	C or H <12 month	77.6		12-23 m	1522	23.7	2006	
DTP1	Card or History	74.8		12-23 m	1522	23.7	2006	
DTP1	C or H <12 month	71.7		12-23 m	1522	23.7	2006	
DTP3	Card or History	58.5		12-23 m	1522	23.7	2006	
DTP3	C or H <12 month	56.1		12-23 m	1522	23.7	2006	
Pol3	Card or History	83.1		12-23 m	1522	23.7	2006	
Pol3	C or H <12 month	78.6		12-23 m	1522	23.7	2006	
MCV	Card or History	59.9		12-23 m	1522	23.7	2006	
MCV	C or H <12 month	50.2		12-23 m	1522	23.7	2006	
HepB	Card or History	57.3		12-23 m	1522	23.7	2006	
HepB	C or H <12 month	54.5		12-23 m	1522	23.7	2006	
PAB	n.a.	59.8		CBAW	5677		2006	
2004 EPI Coverage Evaluation Survey, Pakistan 2006								
BCG	Card or History	77.7		12-23 m	72280			
DTP1	Card or History	74.6		12-23 m	72280			
DTP3	Card or History	64.5		12-23 m	72280			
Pol3	Card or History	64.4		12-23 m	72280			
MCV	Card or History	62.6		12-23 m	72280			
HepB	Card or History	60.7		12-23 m	72280			
2003 Pakistan Social and Living Standards Measurement Survey 2004-2005								
BCG	Card	51		12-23 m			2004/2005	
BCG	C or H <12 month	82		12-23 m			2004/2005	
DTP1	Card	51		12-23 m			2004/2005	
DTP1	C or H <12 month	82		12-23 m			2004/2005	
DTP3	Card	50		12-23 m			2004/2005	
DTP3	C or H <12 month	80		12-23 m			2004/2005	
Pol3	Card	50		12-23 m			2004/2005	
Pol3	C or H <12 month	81		12-23 m			2004/2005	
MCV	Card	49		12-23 m			2004/2005	
MCV	C or H <12 month	78		12-23 m			2004/2005	
2001 Pakistan Integrated Household Survey, 2002								
BCG	Card or History	67		12-23 m			2001/2002	
DTP1	Card or History	71		12-23 m			2001/2002	
DTP3	Card or History	63		12-23 m			2001/2002	
Pol3	Card or History	89		12-23 m			2001/2002	
MCV	Card or History	57		12-23 m			2001/2002	
1998 Assessment of Immunization Coverage, Pakistan February - April 1999								
DTP1	Card or History			12-23 m	3664	37	1999	
DTP3	Card or History			12-23 m	3664	37	1999	
Pol3	Card or History	58.4		12-23 m	3664	37	1999	Weighted averages
MCV	Card or History	54		12-23 m	3664	37	1999	Weighted averages
1998 Pakistan Integrated Household Survey, 2002								
BCG	Card or History	65		12-23 m			1998/1999	

Pakistan

Details Survey Data

Year Source

Antigen	Confirmation method	% coverage	Compliance with schedule	Age group	Sample size	% cards seen	Survey year	Comments
DTP1	Card or History	67		12-23 m			1998/1999	
DTP3	Card or History	58		12-23 m			1998/1999	
Pol3	Card or History	70		12-23 m			1998/1999	
MCV	Card or History	55		12-23 m			1998/1999	

1996 Pakistan Fertility and Family Planning Survey 1996-97 (PFFPS), 1998

BCG	Card or History	58.8		12-35 m	4421		1996/97	
DTP1	Card or History	62.4		12-35 m	4421		1996/97	
DTP3	Card or History	45.8		12-35 m	4421		1996/97	
Pol3	Card or History	35.3		12-35 m	4421		1996/97	
MCV	Card or History	27.8		12-35 m	4421		1996/97	

1995 Pakistan Integrated Household Survey, 2002

BCG	Card or History	73		12-23 m			1995/1996	
DTP1	Card or History	73		12-23 m			1995/1996	
DTP3	Card or History	58		12-23 m			1995/1996	
Pol3	Card or History	58		12-23 m			1995/1996	
MCV	Card or History	47		12-23 m			1995/1996	

1994 Multiple Indicators Cluster Survey of Pakistan 1995

BCG	Card or History	75		12-23 m	2223	13	1995	
DTP1	Card or History	69		12-23 m	2223	13	1995	
DTP3	Card or History	35		12-23 m	2223	13	1995	
Pol3	Card or History	37		12-23 m	2223	13	1995	
MCV	Card or History	53		12-23 m	2223	13	1995	

1990 EPI Programme Review in Pakistan 1991

BCG	Card or History	97.5		12-23 m	1698	91.1	1991	
DTP1	Card or History	98.5		12-23 m	1698	91.1	1991	
DTP3	Card or History	95.6		12-23 m	1698	91.1	1991	
Pol3	Card or History	95.6		12-23 m	1698	91.1	1991	
MCV	Card or History	97		12-23 m	1698	91.1	1991	

1990 Pakistan, Demographic and Health Survey 1990/1991, 1992

BCG	Card or History	69.7		12-23 m	1215	29.6	1990/91	
BCG	C or H <12 month	61.1		12-23 m	1215	29.6	1990/91	
BCG	C or H <12 month	59.5		24-35 m	1141	20.3	1990/91	
BCG	C or H <12 month	46.4		36-47 m	1167	13.9	1990/91	
BCG	C or H <12 month	49.9		48-59 m	966	11.7	1990/91	
DTP1	Card or History	64.1		12-23 m	1215	29.6	1990/91	
DTP1	C or H <12 month	57.9		12-23 m	1215	29.6	1990/91	
DTP1	C or H <12 month	54.1		24-35 m	1141	20.3	1990/91	
DTP1	C or H <12 month	39.9		36-47 m	1167	13.9	1990/91	
DTP1	C or H <12 month	45.6		48-59 m	966	11.7	1990/91	
DTP3	Card or History	42.7		12-23 m	1215	29.6	1990/91	
DTP3	C or H <12 month	32.7		12-23 m	1215	29.6	1990/91	
DTP3	C or H <12 month	35.7		24-35 m	1141	20.3	1990/91	
DTP3	C or H <12 month	22.2		36-47 m	1167	13.9	1990/91	
DTP3	C or H <12 month	28		48-59 m	966	11.7	1990/91	
Pol3	Card or History	42.9		12-23 m	1215	29.6	1990/91	
Pol3	C or H <12 month	32.6		12-23 m	1215	29.6	1990/91	
Pol3	C or H <12 month	34.1		24-35 m	1141	20.3	1990/91	

Pakistan

Details Survey Data

Year Source

Antigen	Confirmation method	% coverage	Compliance with schedule	Age group	Sample size	% cards seen	Survey year	Comments
Pol3	C or H <12 month	21.6		36-47 m	1167	13.9	1990/91	
Pol3	C or H <12 month	28		48-59 m	966	11.7	1990/91	
MCV	Card or History	50.2		12-23 m	1215	29.6	1990/91	
MCV	C or H <12 month	35.5		12-23 m	1215	29.6	1990/91	
MCV	C or H <12 month	26.6		24-35 m	1141	20.3	1990/91	
MCV	C or H <12 month	25.4		36-47 m	1167	13.9	1990/91	
MCV	C or H <12 month	38.9		48-59 m	966	11.7	1990/91	

1986 EPI/CDD-Pakistan Interprovincial Immunization Coverage Evaluation 1987

BCG	Card or History	90		12-23 m			1987	
DTP1	Card or History	90		12-23 m			1987	
DTP3	Card or History	81		12-23 m			1987	
Pol3	Card or History	81		12-23 m			1987	
MCV	Card or History	75		12-23 m			1987	

Pakistan

WHO/UNICEF Estimates of Protection at Birth (PAB) against tetanus

In countries where tetanus is recommended for girls and women coverage is usually reported as "TT2+", i.e. the proportion of (pregnant) women who have received their second or superior TT dose in a given year. TT2 + coverage, however, can under-represent the actual proportion of births that are protected against tetanus as it does not include women who have previously received protective doses, women who received one dose without documentation of previous doses, and women who received doses in TT (or Td) supplemental immunization activities (SIA). In addition, girls who have received DTP in their childhood and are entering childbearing age, may be protected with TT booster doses.

WHO and UNICEF have developed a model that takes into account the above scenarios, and calculates the proportion of births in a given year that can be considered as having been protected against tetanus - "Protection at Birth".

In this model, annual cohorts of women are followed from infancy through their life. A proportion receive DTP in infancy (estimated based on the WHO-UNICEF estimates of DTP3 coverage). In addition some of these women also receive TT through routine services when they are pregnant and may also receive TT during SIAs. The model also adjusts reported data, taking into account coverage patterns in other years, and/or results available through surveys. The duration of protection is then calculated, based on WHO estimates of the duration of protection by doses ever received. The proportion of births that are protected against tetanus as a result of maternal immunization reflects the tetanus immunization received by the mother throughout her life rather than simply the TT immunizations received during the current pregnancy.

¹ This model is described in: Griffiths U., Wolfson L., Quddus A., Younus M., Hafiz R.. Incremental cost-effectiveness of supplementary immunization activities to prevent neo-natal tetanus in Pakistan. Bulletin of the World Health Organization 2004; 82:643-651.

Pakistan

Year	PAB coverage estimate (%)
1980	
1981	1
1982	1
1983	4
1984	8
1985	12
1986	20
1987	32
1988	31
1989	40
1990	50
1991	55
1992	59
1993	62
1994	62
1995	63
1996	65
1997	67
1998	68
1999	70
2000	71
2001	74
2002	79
2003	79
2004	78
2005	78
2006	80
2007	78
2008	80